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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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FACSIMILE COVER SHEET

DATE: MAY 23, 1995

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TO: GARY DOOLITTLE

FAX NUMBER: (303) 279-4650

FROM: D. WAYNE HEDBERG

Minerals Reclamation and Development Program

PHONE: (801) 538-5340
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SUBJECT: DRAFT REVIEW COMMENTS
ASHGROVE CEMENT - LEAMINGTON PLANT/QUARRY - M/023/004

REMARKS: WILL SEND FINAL DRAFT WITH ENGINEERING COMMENTS INCLUDED WITHIN NEXT 7-10 DAYS. ANY QUESTIONS, PLEASE CONTACT ME, TOM MUNSON OR LYNN KUNZLER OF MINERALS STAFF.

Should you encounter any problems with this copy, or do not receive all the pages, please call

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Tom, What I'd like to have today.

M023004.rvw

May 23, 1995

DRAFT

Mr. G. Duane Crutchfield
Ash Grove Cement Company
P.O. Box 51
Nephi, Utah 84648

Re: Plan Revision Review, Ash Grove Cement Company, Leamington Plant, M/023/004, Juab County, Utah

Dear Mr. Crutchfield:

The Division has completed a review of your draft Notice of Intention to Revise Large Mining Operations for the Leamington Plant, located in Juab County, Utah, which was received March 15, 1995. After reviewing the information, the Division has the following comments which will need to be addressed before tentative approval may be granted. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

R647-4-105 - Maps, Drawings & Photographs

105.1 Topographic base map, boundaries, pre-act disturbance

The ability to ascertain the area and amount of disturbance (pre and post act) in relationship to the facilities location and topographic considerations (pit areas, drainage channels [natural and reclaimed]) is nearly impossible based on the map scales used, clarity of maps, and the level of detail in the information submitted. The maps lack legends, complete information, and the necessary detail to allow an accurate and complete review of the hydrology, soils, engineering, reclamation and revegetation at this point in time.

It is noted, that the one map submitted in the original permit of the scale 1 inch = 2000 feet (i.e. USGS 7.5 minute series) is the clearest map found in the plan, although its purpose was to show mining claims. Another copy of this map could be used to show the area in question if it was used to show permit boundary, pit location, facilities, water wells, existing roads, etc. The map submitted as "Ash grove Cement West Leamington Quarry" is useful to show proposed disturbance and existing disturbance. The copy submitted to the Division is very difficult to read/interpret. Please provide another copy with appropriate legend and bolder lines or cross-hatching differentiating between the various treatments. Post mining drainage, etc. could also be included on that map. (TM)

105.3 Drawings or Cross Sections (slopes, roads, pads, etc.):

A 'reclamation treatments' map needs to be provided which identifies areas that will receive different seed mixes, topsoil redistribution depths, and other reclamation treatments, as well as identifying areas for which various variances have been requested. (LMK)

105.3.15

The application lacks any specific information on postmining drainage. It is appropriate that the reclamation plan contain descriptions of drainage patterns following mining. There will be large pad areas left with no apparent provisions for post mining drainage routing (i.e. channel construction, etc.). Please discuss and show your intentions for post-mining drainage configurations. The major waste area proposed is a valley fill and as such, drainage will probably have to be routed along one side of the fill and down the face. Please describe how this will be accomplished and how the channel will be protected. (TM)

105.4 Photographs

If recent copies are available, the use of aerial photographs, as seen in the mine office conference room, might be helpful to relate current disturbance and the area of future disturbance. (TM)

R647-4-106 - Operation Plan

106.3 Estimated acreages disturbed, reclaimed, annually.

The figures included in the plan show the creation of some significant valley fills in the waste disposal areas. The amount of acreages disturbed on a life of mine basis at specific intervals is not clear. On page 3-1 of the plan it states that 220 acres of disturbed land exists currently and that 300 acres of additional disturbance will occur over the next eight years. On page 4-1, it states that 533 acres of additional phased disturbance will occur, making what appears to be 753 acreages of total disturbance. Please clarify these amounts of disturbance and relate all disturbed area numbers to specific figures or maps.

106.5 Existing soil types, location, amount:

There is no soil data for the expansion area. While the existing permit identifies suitable soils in the area for reclamation, as per commitments in the reclamation plan, topsoil is being salvaged in the waste disposal areas (the amount of soil is not reported). An order 3 survey and soils map needs to be provided for the expansion area. If suitable soils exist, then an appropriate soil management plan will need to be developed. (LMK)

106.6 Plan for protecting & redepositing soils:

From our site visit of May 2, 1995, it appeared that only limited amounts of soil material is available for salvage and redistribution (the Division does not expect Ash Grove to salvage topsoil in areas where it would be unsafe to operate equipment), the soils management plan will need to identify how topsoil will be protected (from wind/water erosion), location of any topsoil stockpiles, and how it will be redistributed for reclamation, including thickness of replaced soil. Direct haul and placement of soil on areas being concurrently reclaimed is an appropriate option to stockpiling. (LMK)

106.7 Existing vegetation - species and amount:

The current permit contains limited vegetation data for three vegetation community types: Sagebrush, Browse-Shrub, and Pinyon-Juniper. This data consists of percent composition of the major species in each community based on production. Lacking from this data is vegetation cover levels which is used to establish revegetation success standards in accordance with Rule R-647-4-111. It will be necessary to obtain cover values from all plant community types that will be affected. A species list will also need to be generated for any new plant communities that exist within the expansion area. (LMK)

106.8 Depth to groundwater, extent of overburden, geology

No information has been submitted regarding the use of groundwater other than that water rights and a well have been obtained to use for the operation. Location of the well should be shown on the appropriate resource map and a description of the aquifer from which the water is drawn included in the plan.

During the site visit on May 2, 1995, the operator mentioned the existence of some monitoring wells found adjacent to an old waste dump area and that this was being monitoried by Martin Marietta. This area is found within the current permit area and as such the information on the construction of those wells and the monitoring data collected, would help provide some more information on the ground water in the area.

A copy of any groundwater permits and any additional information pertaining to groundwater resources in the area needs to be included in the plan.(TM)

R647-4-107 - Operation Practices

107.2 Drainages to minimize damage

2. Drainages - If natural channels are to be affected by the mining operation, then the operator shall take appropriate measures to avoid or minimize environmental damage.

The comment found in Appendix A is not adequate to demonstrate stability and erosion protection. It appears from the plan that there will be many long disturbed slopes in the waste disposal areas and as such erosion control does appear to be a issue. Please explain why erosion will be non-existent except for periods of great rainfall. Erosion was evident on dump slopes during our site visit on May 2, 1995. Therefore, it is possible given the right set of circumstances. Does this assumption relate to final slope configuration, surface roughness, soil type, revegetation success, or considerations for land shaping? The current response is not adequate and more details must be supplied regarding final drainage configuration and erosion control considerations for waste dump areas and dump slopes. (TM)

107.3 Erosion control & sediment control

3. Erosion Control - Operations shall be conducted in a manner such that sediment from disturbed areas is adequately controlled. The degree of erosion control shall be

appropriate for the site-specific and regional conditions of topography, soil, drainage, water quality or other characteristics.

The operator has not supplied any information to assess the background erosion and sediment production based on site-specific or regional conditions. This may or may not be neccessary based on the discussion and use of good engineering practices for erosion control in the final reclamation plan.

The final slopes are referenced in the old reclamation plan as no greater than 3.5:1. In Chapter 7 variances are requested to leave all reclaimed slopes at no greater than 2:1, and on the final contour map the waste disposal areas show 1.66:1 slopes. Please explain these inconsistencies. (TM)

107.4 Deleterious material safety stored or removed

The operation of the facility and the mine must be discussed from the aspect of storage of deleterious materials. Please reference a Spill Prevention Control and Containment (SPCC) plan if one exists and discuss the handling and storage of deleterious materials found on site. (TM)

107.5 Suitable soils removed & stored:

Please refer to comments under R647-4-106.5 & 106.6. (LMK)

107.6 Concurrent reclamation:

Please describe plans for reclaiming areas no longer needed for mining operations. A description of revegetation test plots that have been implemented as well as any results should also be included. (LMK)

It is our opinion that contemporaneous reclamation is very prudent. The operator will be able to try reclamation techniques and determine their success or failure on a small scale and adjust future projects on reclamation successes accordingly. In the current scenario of using the waste disposal area in the Canyon to the south of the current operation, it would be an appropriate consideration to reclaim each lift and its face as the waste disposal area was constructed. This methodology would allow the waste disposal area to be reclaimed as it was constructed and not have a long large slope at the end of disposal to reclaim all at once. The regrading and terracing of dump slopes and the routing of all road drainage away from the outslopes is an appropriate consideration as well. (TM)

R647-4-108 - Hole Plugging Requirements

No information has been given regarding drill holes or the plugging of drill holes. This information must be supplied. All drill holes and water monitoring holes must be plugged according to applicable regulations. (TM)

R647-4-109 - Impact Assessment

109.1 Impacts to surface & groundwater systems

Groundwater

A general statement regarding groundwater is found in Appendix A:

"In the bottomland near the river, an aquifer has been located with water rights being established. Process water and domestic water will be acquired from the well in the general vinicity of coordinates 24,900N, 20,200E, which will be pumped to a tank for use as needed."

The permit should plot the location of all wells on the resource map requested and discuss the completion of any wells and final disposition of these wells upon reclamation. Also, are there any springs within the area of mining disturbance or reclamation?

Surface Water

The plan needs to show and discuss the reclamation of surface water drainages. It appears from the operation plan that Shale Area #1 will totally fill in what appears to be an emphermal drainage or create a valley fill. How will drainage traverse this valley fill and how will it be constructed. Crossing of the Canyon to the west, whether it will be a valley fill or a road along the ridge should be discussed in terms of its impact on xurface water drainage.

The pit area will be a large flat area where surface drainage and final disposition of that drainage must be discussed and considered. The benches established with the final deposition of the Shale areas are also areas where some consideration to surface drainage may be appropriate, as well as, the final outslopes of the Shale waste disposal areas.

Will drainage still flow to the Sevier River in existing channels or will reclaimed channels be created across the plant site? (TM)

109.2 Impacts to threatened & endangered wildlife/habitat:

The assessment of impacts to threatened and endangered species was conducted over 15 years ago. A current assessment needs to be provided which includes those species listed during the last 15 years. It is the Division's understanding that this assessment may be available through the Forest Service. If so, please make this information a part of the application under this section. (LMK)

109.3 Impacts on existing soils resources:

See comments under Rule R647-4-106.5 & 106.6. (LMK)

109.4 Slope stability, erosion control, air quality, safety

See comments under Rule R647-4-107.3 (TM)

R647-4-110 - Reclamation Plan

110.5 Revegetation planting program:

The operator needs to provide details of the revegetation planting program. Specifically, what species will be planted and at what rates. It is recommended that a minimum of 10-12 different species of grasses, forbs and shrubs be included in each seed mix. Plans should be based on pre-mining vegetation communities, intended post mining landuse and results from any test plots. The Division can provide assistance in developing a seed mix(es) if requested. (LMK)

R647-4-111 - Reclamation Practices

111.2 Reclamation of natural channels

2. Drainages - If natural channels have been affected by mining operations, then reclamation must be performed such that the channels will be left in a stable condition. Consideration for actual and reasonably expected water flow, so as to avoid or minimize future damage to the hydrologic system, must be assessed and appropriate design plans developed.

The plan has not adequately addressed the final deposition of surface water drainage from the pit, the shale disposal areas, or drainage through the facility area.(TM)

111.3 Erosion & sediment control

3. Erosion Control - Reclamation shall be conducted in a manner such that sediment from disturbed areas is adequately controlled. The degree of erosion control shall be appropriate for the site-specific and regional conditions of topography, soil, drainage, water quality or other characteristics.

Final erosion control plans have been based on statements like those found in Appendix A and Chapter 6. This not adequate as explained previously, because of the lack of specific details, in regards to what specific reclamation techniques will be used to stabilize slopes.

- "There is no erosion currently except during the 100-year storm."(Appendix A)
- "The shale and non-product material placement areas will be placed at near to the final contours as an operational plan.(please note : the operational plan shows 1.66:1 slopes) Only minimal shaping to assure any erosion control may be needed."(Chapter 6)

These statements may apply to current undisturbed lands but may not be related to reclaimed soil materials and surfaces. Based on the fact, that long reclaimed slopes will exist following reclamation, and materials of possibly different stability (green shale) will be found on the surface, then more detailed information will be required on exactly what techniques will be used to control erosion on reclaimed surfaces (i.e. surface roughness, contouring, ripping, mulching, etc.).(TM)

111.6 All slopes regraded to stable configuration:

See comments under Rule R647-4-112. (LMK)

111.8 All roads & pads reclaimed

The final disposition of roads and pads is unclear. The operator needs to explain if any culverts or surface water conveyances will be left in place following reclamation and how those structures will be maintained.. Roads and associated compacted surfaces tend to provide the most drainage and as such should be deep ripped/roughened and reclaimed when no longer needed.(TM)

111.9 Dams & impoundments left self draining & stable

No dams or impoundments are proposed, but the existence of sediment ponds as part of the post mining land use might be appropriate, if they are sloped to provide safe access for wildlife, designed to be stable, etc.

111.12 Topsoil redistribution:

Apparent conflicts in topsoil handling need to be resolved. Apparently, the original reclamation plan involved salvage and redistribution of topsoil. After stating that there is virtually no salvageable soil materials (page 6-1), it is stated that the original plan will be followed? Since variances for topsoil salvage or redistribution were never requested (or granted), it is assumed that these activities will take place. See also comments under Rule R647-4-106.5 & 106.6. (LMK)

R647-4-112 - Variance

The operator has requested variances to meeting the standards of Rules R-004 111-6 and 111-7. It is assumed that the rules for which variances are being requested are R647-4-111.6 (Slopes) and R647-4-111.7 (Highwalls) respectively. Section 7.2 of the plan states that "where possible, the final reclaimed slopes at the mine site would be no greater than 2 horizontal to 1 vertical . . . which is stable for these materials . . .". We question what the requested variance is for, if reclaimed slopes are stable? Please clarify. With regards to the variance for highwalls, please provide a map or other description which identifies what areas of the mine plan these refer to. A stability analysis and/or site inspection may be needed before this variance can be approved.

Pursuant to our site visit of May 2, 1995, the operator will need to request a variance from salvaging topsoil on slopes that are too steep to safely operate equipment. These areas should be identified on a map. (LMK)

The Division will suspend further review of the mine NOI until your response to this letter is received. If you have any questions in this regard please contact me, Tom Munson, Tony Gallegos, or Lynn Kunzler of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,